

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-35 (Canceled)

36 - (New) A process for the preparation of a fluoroaromatic compound from an aromatic compound carrying at least one amino group on the aromatic ring, comprising the steps of:

- a) reacting said aminoaromatic compound with a nitrosating agent, in the presence of a source of boron trifluoride, in an organic medium,
- b) carrying out a heat treatment on the reaction medium comprising the diazonium salt obtained in step a), and thereby obtaining the fluoroaromatic compound, by decomposition of the diazonium salt, without intermediate separation of the latter, and
- c) recovering the fluoroaromatic compound obtained in step b) .

37 - (New) The process as claimed in claim 36, wherein in step a) the source of boron trifluoride, the aminoaromatic compound and the organic solvent are added in any order.

38 - (New) The process as claimed in claim 36, wherein the diazonium salt formed in the reaction medium is decomposed as it is formed.

39 - (New) The process as claimed in claim 38, wherein it comprises the following sequences:

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the source of boron trifluoride, the aromatic compound carrying at least one amino group on the aromatic ring and the organic solvent are mixed by introducing in any order,
the reaction medium is brought to the decomposition temperature of the diazonium salt,
the nitrosating agent is gradually added, and
the fluoroaromatic compound formed is recovered.

40 - (New) The process as claimed in claim 38, wherein it comprises the following sequences:

the source of boron trifluoride, the nitrosating agent and the organic solvent are mixed by introducing in any order,
the reaction medium is brought to the decomposition temperature of the diazonium salt,
the aromatic compound carrying at least one amino group on the aromatic ring is gradually added, and
the fluoroaromatic compound formed is recovered.

41 - (New) The process as claimed in claim 36, wherein the source of boron trifluoride is charged at low temperature, the temperature being chosen between -10°C and 20°C, optionally between 0 and 10°C, with the exception of boron trifluoride in the dihydrate form, which is added at ambient temperature.

42 - (New) The process as claimed in claim 36, wherein the aminoaromatic compound is added all at once or gradually.

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- 43 - (New) The process as claimed in claim 36, wherein the aminoaromatic and/or the nitrosating agent compound is added alone or in solution in the organic solvent.
- 44 - (New) The process as claimed in claim 36, wherein the nitrosating agent is added all at once or gradually.
- 45 - (New) The process as claimed in claim 36, wherein the decomposition temperature of the diazonium salt varies between ambient temperature and 150°C, optionally between 40°C and 130°C.
- 46 - (New) The process as claimed in claim 36, wherein the process is carried out at atmospheric pressure or under a controlled atmosphere of inert gases.
- 47 - (New) The process as claimed in claim 39, wherein the source of boron trifluoride is charged at low temperature; the aminoaromatic compound is gradually added; the reaction medium is heated to the decomposition temperature of the diazonium salt the nitrosating agent, optionally an alkyl nitrite, is gradually added.
- 48 - (New) The process as claimed in claim 47, wherein the reaction medium is heated to a temperature of between ambient temperature and 150°C, optionally between 40°C and 130°C.
- 49 - (New) The process as claimed in claim 36, wherein the fluoroaromatic compound is recovered from the organic phase.
- 50 - (New) The process as claimed in claim 36, wherein the nitrosating agent is any proton-free NO^+ -generating source, a nitrogen dioxide NO_2 , nitrogen trioxide N_2O_3 , nitrogen tetroxide N_2O_4 or an alkyl nitrite.
- 51 - (New) The process as claimed in claim 16, wherein the alkyl nitrite corresponds to the formula (II):

R_a-ONO (II)

Wherein R_a represents a linear or branched alkyl group having from 1 to 12 carbon atoms, optionally from 1 to 6 carbon atoms, or a cycloalkyl group having 5 or 6 carbon atoms.

52 - (New) The process as claimed in claim 51, wherein the alkyl nitrite is n-butyl, tert-butyl or isoamyl nitrite.

53 - (New) The process as claimed in one of claims claim 36, wherein the source of boron trifluoride is boron trifluoride in the gaseous form or in the complex form.

54 - (New) The process as claimed in claim 53, wherein the source of fluoride is boron trifluoride in combination with a solvent chosen from water, ethers, alcohols and phenols, acetic acid or acetonitrile.

55 - (New) The process as claimed in claim 52, wherein the source of fluoride is boron trifluoride in combination with a solvent chosen from water, ethyl ether or acetic acid.

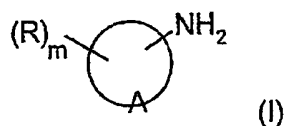
56 - (New) The process as claimed in claim 36, wherein the reaction is carried out in an organic solvent, optionally a polar or nonpolar aprotic solvent.

57 - (New) The process as claimed in claim 56, wherein the organic solvent is an halogenated or nonhalogenated aliphatic or an aromatic hydrocarbon; aliphatic, cycloaliphatic or aromatic ether, or a cyclic ethers; aliphatic or aromatic nitrile; linear or a cyclic carboxamide.

58 - (New) The process as claimed in claim 57, wherein the organic solvent is chlorobenzene, 1,2-dichlorobenzene, toluene, benzonitrile or N-methylpyrrolidone.

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59 - (New) The process as claimed in claim 36, wherein the aminoaromatic compound corresponds to the general formula:



wherein:

A symbolizes the residue of a ring forming all or part of a monocyclic or polycyclic, aromatic, carbocyclic or heterocyclic system,

R, which are identical or different, represent substituents on the ring,
m represents the number of substituents on the ring.

60 - (New) The process as claimed in claim 59, wherein the aminoaromatic compound corresponds to the formula (I) in which A is the optionally substituted residue of a cyclic compound optionally having at least 4 atoms in the ring, optionally 5 or 6, and representing at least one of the following rings:

a monocyclic or polycyclic, aromatic, carbocycle,

a monocyclic or polycyclic, aromatic, heterocycle comprising at least one of the heteroatoms O, N and S.

61 - (New) The process as claimed in claim 59, wherein the optionally substituted residue A represents the residue of:

a monocyclic or polycyclic, aromatic, carbocyclic compound,

a monocyclic or polycyclic, aromatic, heterocyclic compound,

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in these formulae, R_0 representing a hydrogen atom or an alkyl group having from 1 to 4 carbon atoms, a cyclohexyl group or a phenyl group.

62 - (New) The process as claimed in claim 59, wherein the optionally substituted residue A represents:

an aromatic carbocycle,

an aromatic bicycle comprising two aromatic carbocycles,

a partially aromatic bicycle comprising two carbocycles, one of the two of which is aromatic,

an aromatic heterocycle,

an aromatic bicycle comprising an aromatic carbocycle and an aromatic heterocycle,

a partially aromatic bicycle comprising an aromatic carbocycle and a heterocycle,

an aromatic bicycle comprising two aromatic heterocycles,

a partially aromatic bicycle comprising a carbocycle and an aromatic heterocycle,

a tricycle comprising at least one aromatic carbocycle or heterocycle,

a series of aromatic carbocycles,

a partially aromatic series of carbocycles,

a series of an aromatic carbocycle and of an aromatic heterocycle, or

a partially aromatic series of a carbocycle and of a heterocycle.

63 - (New) The process as claimed in claim 59, wherein the optionally substituted residue A represents a benzene, naphthalene, pyridine or quinoline nucleus.

64 - (New) The process as claimed in claim 59, wherein the aminoaromatic compound corresponds to the formula (I) in which R, which are identical or different, represent:

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a linear or branched alkyl group having from 1 to 6 carbon atoms, optionally from 1 to 4 carbon atoms, such as methyl, ethyl, propyl, isopropyl, butyl, isobutyl, sec-butyl or tert-butyl,

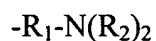
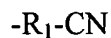
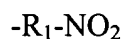
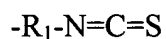
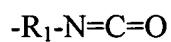
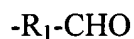
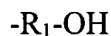
a linear or branched alkenyl or alkynyl group having from 2 to 6 carbon atoms, optionally from 2 to 4 carbon atoms, such as vinyl or allyl,

a linear or branched alkoxy group having from 1 to 6 carbon atoms, optionally from 1 to 4 carbon atoms, such as the methoxy, ethoxy, propoxy, isopropoxy or butoxy groups, an alkenyloxy group, optionally an allyloxy group, or a phenoxy group,

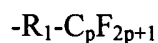
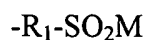
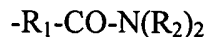
a cyclohexyl, phenyl or benzyl group,

an acyl group having from 2 to 6 carbon atoms,

a group of formula:



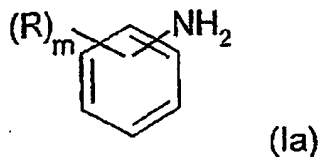
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in said formulae, R_1 represents a valency bond or a saturated or unsaturated and linear or branched divalent hydrocarbon group, having from 1 to 6 carbon atoms, such as, for example, methylene, ethylene, propylene, isopropylene or isopropylidene; the groups R_2 , which are identical or different, represent a hydrogen atom or a linear or branched alkyl group having from 1 to 6 carbon atoms or a phenyl group; M represents a hydrogen atom, an alkali metal, optionally sodium, or a group R_2 ; X symbolizes a halogen atom, optionally a chlorine, bromine, fluorine or iodine atom; p represents a number ranging from 1 to 10.

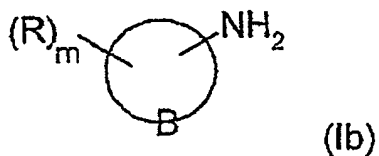
65 - (New) The process as claimed in claim 59, wherein the aminoaromatic compound corresponds to the formula (I) in which m is a number less than or equal to 4, optionally equal to 1 or 2.

66 - (New) The process as claimed in claim 65, wherein the aminoaromatic compound corresponds to the formula (Ia):



in said formula R and m have the meaning given above.

67 - (New) The process as claimed in claim 59, wherein the aminoaromatic compound corresponds to the formula (1b):



wherein:

R and m have the meaning given above,

B represents the residue of a monocyclic aromatic heterocycle comprising 5 or 6 atoms, one or two of which among them are nitrogen atoms, or the residue of a polycyclic heterocycle comprising, on the one hand, an aromatic heterocycle comprising 5 or 6 atoms, one or two of which among them are nitrogen atoms, and, on the other hand, a carbocycle or a nitrogenous heterocycle which is saturated, unsaturated or aromatic and which comprises 5 or 6 atoms.

68 - (New) The process as claimed in claim 59, wherein the aminoaromatic compound is chosen from: 4-bromoaniline, 4-bromo-3-methylaniline, 1-aminonaphthalene, 2-chloro-3-aminopyridine, 3-aminoquinoline or 3-amino-6-methoxyquinoline.